

AMENDMENTS TO THE CLAIMS

1-19. (Cancelled)

20. (Currently Amended) A method of controlling and monitoring via client systems calls placed through telephony devices, the telephony devices including a Session Initiation Protocol-enabled telephone and a time division multiplexing telephone, each telephony device having a unique identifier, the method comprising:

providing a plurality of client systems and telephony devices within a communication network, each client system having a unique identifier and hardware and software components that provide a user interface for controlling a telephony device, the client systems being communicatively connected in a group;

for each of the telephony devices, providing a logical representation and a physical representation for the telephony device, the logical representation for a telephony device representing a communication link of the telephony device, the physical representation of a telephony device representing physical attributes of the telephony device;

determining relationships between client systems and telephony devices based on their unique identifiers, a relationship indicating that a client system is to control a telephony device via the logical representation and the physical representation of the telephony device;

for each relationship between a client system and a telephony device,

establishing a device control channel between the physical representation of the telephony device and the client system; and

establishing a call control channel between the logical representation of the telephony device and the client system the call control channel being different from the device control channel; and

under control of the user interface of each client system that has a relationship with a telephony device,
controlling the telephony device via the logical representation using the call control channel and via the physical representation using the device control channel to place calls via the telephony device; and
monitoring the telephony device via the logical representation using the call control channel and via the physical representation using the device control channel to receive calls via the telephony device.

21. (Previously Presented) The method of claim 20 including for each telephony device,

when the telephony device is a time division multiplexing (TDM) device,
associating the logical representation and the physical representation of the telephony device with a phone number of the telephony device; and

when the telephony device is a SIP device,

associating the logical representation of the telephony device with an electronic mail address; and

associating the physical representation of the telephony device with a fully qualified domain name.

22. (Previously Presented) The method of claim 20 wherein the determining of relationships between telephony devices and client systems includes searching a network directory for a listing of telephony devices within the communication network.

23. (Previously Presented) The method of claim 20 wherein the establishing a device control channel between a client system and a telephony device comprises:

sending a SIP INVITE message from the client system to the physical representation of the telephony device;

receiving a SIP OK response sent from the physical representation of the telephony device to the client system;
sending a SIP acknowledgement (ACK) message from the client system to the physical representation of the telephony device in response to receiving the SIP OK response; and
sending a SIP SUBSCRIBE message from the client system to the physical representation of the telephony device;
receiving a SIP OK response sent from the physical representation of the telephony device to the client system; and
receiving a SIP NOTIFY message from the physical representation of the telephony device to the client system to notify the client device of changes in the status of a physical attribute of the telephony device.

24. (Previously Presented) The method of claim 20 wherein the establishing a call control channel between a client system and a telephony device comprises:

sending a SIP OPTION message from the client system to the logical representation of the telephony device;
receiving a SIP OK response sent from the logical representation of the telephony device to the client system;
sending a SIP SUBSCRIBE message from the client system to the logical representation of the telephony device;
receiving a SIP OK response sent from the logical representation of the telephony device to the client system; and
receiving a SIP NOTIFY message from the logical representation of the telephony device to the client system to notify the client device of changes in the status of communication link of the telephony device.

25. (Currently Amended) The method of claim 20 wherein when a telephony device with a relationship to a ~~client~~ client system is a time division multiplexing ("TDM")

device, providing a front end SIP unit in communication with the telephony device and the client system adapted to convert SIP data to computer-telephony-integration integration ("CTI") data and convert CTI data to SIP data.

26. (Currently Amended) A computer-readable medium containing instructions for each of a plurality of client systems, a client system for controlling and monitoring calls placed through a first telephony device of a communication network, the client system having hardware and software components that provide a user interface for controlling the first telephony device, the first telephony device being selected from the group consisting of a Session Initiation Protocol-enabled telephone and a time division multiplexing telephone, each the first telephony device having a logical representation and a physical representation for the first telephony device, the logical representation for a the first telephony device representing a communication link of the first telephony device, the physical representation of a the first telephony device representing physical attributes of the first telephony device, by a method comprising:

determining a relationship between the client system and a the first telephony device;

establishing a device control channel between the physical representation of the first telephony device and the client system;

establishing a call control channel between the logical representation of the first telephony device and the client system;

under control of the user interface of the client system, controlling the first telephony device via the logical representation using the call control channel and via the physical representation using the device control channel to place a call; and

monitoring the first telephony device via the logical representation using the call control channel and via the physical representation using the device control channel.

27. (Previously Presented) The computer-readable medium of claim 26 including

when the first telephony device is a time division multiplexing (TDM) device, associating the logical representation and the physical representation of the first telephony device with a phone number of the telephony device; and

when the first telephony device is a SIP device, associating the logical representation of the first telephony device with an electronic mail address; and associating the physical representation of the first telephony device with a fully qualified domain name.

28. (Previously Presented) The computer-readable medium of claim 27 wherein the determining of relationships between a telephony device and the client system includes searching a network directory for a listing of telephony devices within the communication network.

29. (Previously Presented) The computer-readable medium of claim 26 wherein the establishing a device control channel between the client system and the first telephony device comprises:

sending a SIP INVITE message from the client system to the physical representation of the first telephony device;

receiving a SIP OK response sent from the physical representation of the first telephony device to the client system;

sending a SIP acknowledgement (ACK) message from the client system to the physical representation of the first telephony device in response to receiving the SIP OK response; and

sending a SIP SUBSCRIBE message from the client system to the physical representation of the first telephony device;

receiving a SIP OK response sent from the physical representation of the first telephony device to the client system; and
receiving a SIP NOTIFY message from the physical representation of the first telephony device to the client system to notify the client device of changes in the status of a physical attribute of the telephony device.

30. (Previously Presented) The computer-readable medium of claim 29 wherein the establishing a call control channel between the client system and the first telephony device comprises:

sending a SIP OPTION message from the client system to the logical representation of the first telephony device;
receiving a SIP OK response sent from the logical representation of the first telephony device to the client system;
sending a SIP SUBSCRIBE message from the client system to the logical representation of the first telephony device;
receiving a SIP OK response sent from the logical representation of the first telephony device to the client system; and
receiving a SIP NOTIFY message from the logical representation of the first telephony device to the client system to notify the client device of changes in the status of communication link of the first telephony device.

31. (Previously Presented) The computer-readable medium of claim 26 wherein when the first telephony device is a time division multiplexing ("TDM") device, providing a front end SIP unit in communication with the first telephony device and the client system adapted to convert SIP data to computer-telephony-integration ("CTI") data and convert CTI data to SIP data.

32. (Previously Presented) The computer-readable medium of claim 26 wherein the establishing of the device control channel includes establishing a first SIP

session and establishing of the call control channel includes establishing a second SIP session that is different from the first SIP session.

33. (Currently Amended) A communication network comprising:

a plurality of telephony devices, each telephony device being selected from the group consisting of a Session Initiation Protocol-enabled telephone and a time division multiplexing telephone, each telephony device having a logical representation and a physical representation for the telephony device, the logical representation for a telephony device representing a communication link of the telephony device, the physical representation of a telephony device representing physical attributes of the telephony device; and

a plurality of client systems, each client system having hardware and software components that provide a user interface for controlling the first telephony device, each client system for controlling and monitoring calls placed through a telephony device by performing steps comprising:
determining relationships between the client systems and a first telephony device;
establishing a device control channel between the physical representation of the first telephony device and the client system; and
establishing a call control channel between the logical representation of the first telephony device and the client system; and
controlling the first telephony device via the logical representation using the call control channel and via the physical representation using the device control channel to place a call, the controlling being based on input of a user through the user interface of the client system; and

monitoring the first telephony device via the logical representation using the call control channel and via the physical representation using the device control channel.

34. (Previously Presented) The communication network of claim 33 wherein when the first telephony device is a time division multiplexing (TDM) device, the logical representation and the physical representation of the first telephony device is associated with a phone number of the telephony device; and when the first telephony device is a SIP device, the logical representation of the first telephony device is associated with an electronic mail address; and the physical representation of the first telephony device is associated with a fully qualified domain name.

35. (Previously Presented) The communication network of claim 33 wherein the determining of the relationship between a telephony device and the client system includes searching a network directory for a listing of telephony devices within the communication network.

36. (Previously Presented) The communication network of claim 33 wherein the establishing a device control channel between the client system and the first telephony device comprises:

- sending a SIP INVITE message from the client system to the physical representation of the first telephony device;
- receiving a SIP OK response sent from the physical representation of the first telephony device to the client system;
- sending a SIP acknowledgement (ACK) message from the client system to the physical representation of the first telephony device in response to receiving the SIP OK response; and

sending a SIP SUBSCRIBE message from the client system to the physical representation of the first telephony device;
receiving a SIP OK response sent from the physical representation of the first telephony device to the client system; and
receiving a SIP NOTIFY message from the physical representation of the first telephony device to the client system to notify the client device of changes in the status of a physical attribute of the telephony device.

37. (Previously Presented) The communication network of claim 33 wherein the establishing a call control channel between the client system and the first telephony device comprises:

sending a SIP OPTION message from the client system to the logical representation of the first telephony device;
receiving a SIP OK response sent from the logical representation of the first telephony device to the client system;
sending a SIP SUBSCRIBE message from the client system to the logical representation of the first telephony device;
receiving a SIP OK response sent from the logical representation of the first telephony device to the client system; and
receiving a SIP NOTIFY message from the logical representation of the first telephony device to the client system to notify the client device of changes in the status of communication link of the first telephony device.

38. (Previously Presented) The communication network of claim 33 including a front end SIP unit in communication with the first telephony device and the client system adapted to convert SIP data to computer-telephony-itegration ("CTI") data and convert CTI data to SIP data when the first telephony device is a time division multiplexing ("TDM") device.

39. (Previously Presented) The communication network of claim 33 wherein the first telephony device is a SIP-enabled PBX phone.